INSTALLATION AND OPERATING INSTRUCTIONS

GDH20-Domestic Cooling & Heating
GDH70-Domestic Cooling & Heating

SAFETY INSTRUCTIONS

Do not use this unit if it has been dropped or damaged in any way.

- This unit should not be installed in any area where flammable liquids or vapors may be present. Do not store or use gasoline or other combustible
  materials or liquids near or adjacent to this heat pump.
- Check the rating plate on the unit before installation to make certain the voltage shown is the same as the electricity supply to the heat pump.
- The unit must be connected only to a properly grounded electrical supply.
- Do not fail to properly ground the unit.
- This unit should only be serviced by qualified service personal.
- Always shut off electric power before making unit connections or removing any panels and be extremely careful to avoid injury.
- Components may have sharp edges which can cut you.
- Tubing and compressor contain high pressure refrigerant and they should not
  be exposed to high temperature or be punctured.
- Water temperature over 52 °C (125 °f) can cause severe burns or death from scalding. Feel the water before bathing or showering. Children, disabled, and elderly are at highest risk of being scalded.
- Tampering with the thermostat, heater, elements or electrical connections is dangerous and may result in serious injury. Only properly trained, qualified service personnel should service these components. Do not attempt to modify or change this heat pump in any way.

FEATURES

I SUMMARY

GDH family is environment friendly, high efficiency air source heat pump, provides both domestic hot water and house heating. Intelligent self-adjusting control on managing house heating and domestic hot water production. The GDH family heat pump can be combined to radiator or underfloor heating systems. Offering different options for house heating installations to satisfy all different favorites.

I EASY OPERATION

Most of settings are finished by the manufacturer. System senses the leaving water temperature, and regulate the leaving hot water temperature according to inner setting automatically. The end user just need to press ON/OFF button, then the system shall be managed by the controller properly.

I EXCELLENT PERFORMANCE

High efficiency scroll compressor, high quality plate heat exchanger, control fan speed, precise refrigerant flow control by expansion valve with unique inner programme. All these assure the GDH famility the most excellent performance at variable climate.

I EASY INSTALLATION

All connections of refrigeration circle parts have been put in place by the manufacturer, the connection requested on site is just to connect the heat pump to hydraulic circle.

I EXCELLENT SAFETY CONTROL

Over-pressure, low pressure protection, over-load protection.

Switch on or off system automatically according to the feedback of return water temperature. Available with anti-freezing function in winter.

The controller surveil the status of each component, each occurred malfuntion shall be sent to the indoor display.

I WIDE RANGE WORKING CONDITION

The GDH heat pump can work at -25 °C ~ 35 °C.

I EASY MAINTENANCE

The system has self-diagnose programme. Any malfunction occurred shall be indicated through special code on the screen of the indoor display, so the cause of malfunction can be shoot out easily.

CONTROLLER FEATURES
(only for GDH70-Domestic / for GDH20-Domestic Controller GDH100)

The GDH200 controller is a specialized heat pumps controller including the complete cooling circle. This controller can easily be adjusted to the most various heat pump conditions. Furthermore an additional electric heating can be controlled depending on time and temperature. Of course it has a defrost function for air-water machines and a cooling function for all types. All actuators and sensors are operated from the GDH200 or scanned and processed.

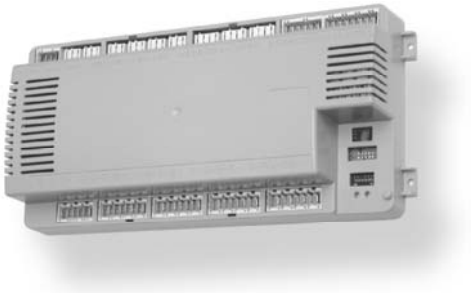
The controller consists of a built-in part and a remote operating unit, either a built-in device or a wall mounting.

Integrated functions

- Control of the heat pump
- brine-to-water
- Automatic defrosting
- 2 heating circuits
- (outdoor temperature compensated)
- Switching to cooling mode
- DHW preparation
- Circulation pump control
- Storage tank management
- Cascade management
- Energy management
- Measurement of heat yield (optional feature)

Variations and equipment

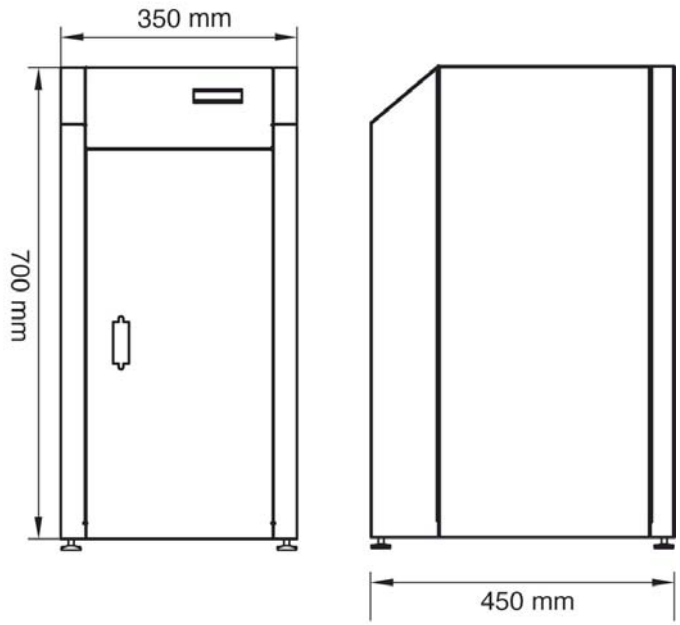
- 16 outputs for the control of valves or pumps
- 12 sensor inputs
- 1 input or output for set points
- 6 optocouplers
- 2 inputs for pressure sensors
- eBus interface



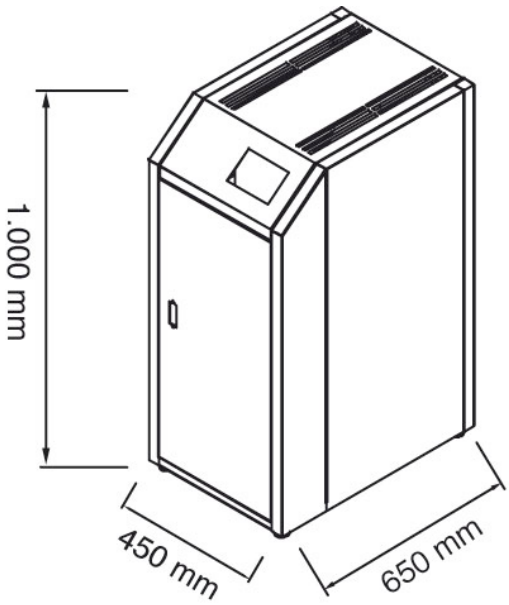
GDH200
Heat pump controller

GDH200
Display GDH70-Domestic

DIMENSIONS GDH-Domestic



GDH20-Domestic



GDH70-Domestic

PRE-INSTALLATION

The heat pump should never be stored or installed on its side. Upright transportation is recommended. If it becomes necessary to transport the heat pump on its side, the manufacturer recommends that the unit be in the upright position for a minimum of two hours prior to operation. Failure to follow these instructions may result in damage to the heat pump.

After removing the unit from the crate/carton, immediately remove the panels and inspect for any damage that might have occurred during shipment.

Report concealed damage immediately to the transportation company and request inspection.

The electric power source must be the same voltage and phase as shown on the rating plate. Line and low voltage wiring must be done in accordance with local codes or the national electric code.

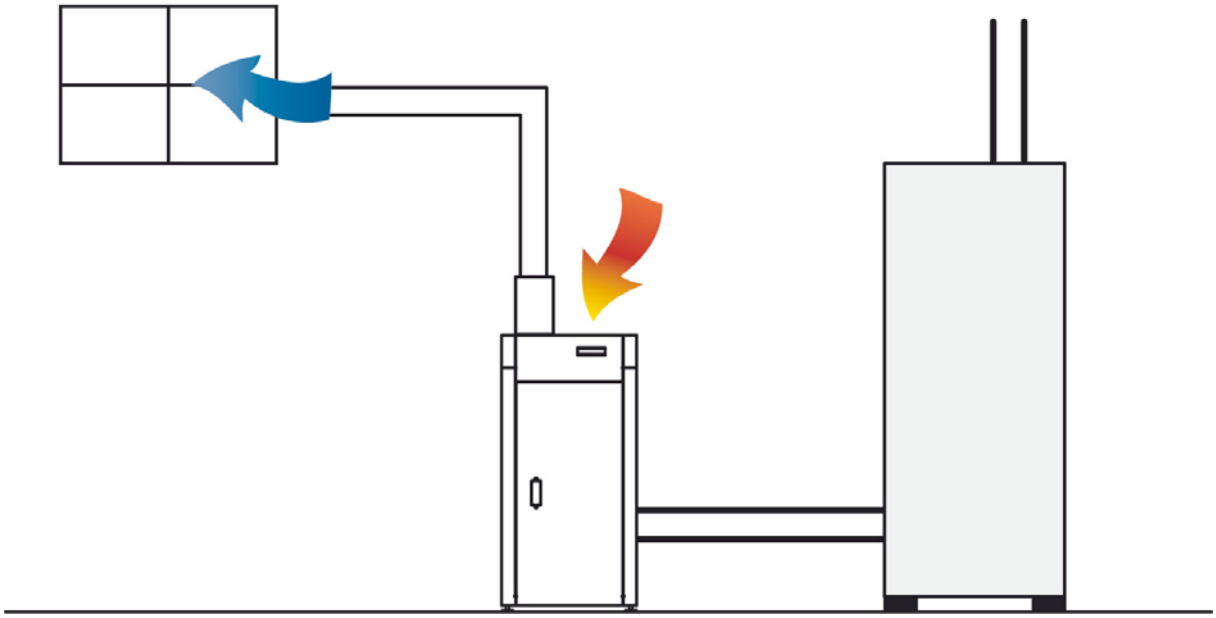
The heat pump must be installed by authorised installation engineers and the installation must follow the applicable local rules and regulations as well, as these installation instructions described in this manual.

We reserve the right to change the specifications within this publication in whole or in part without prior notice. This brochure is to be used as a general guide and does not form any part of a contract or is binding in any way. We reserve the right when necessary, or at our discretion to use alternative suppliers or components manufactured by other suppliers.

INSTALLATION

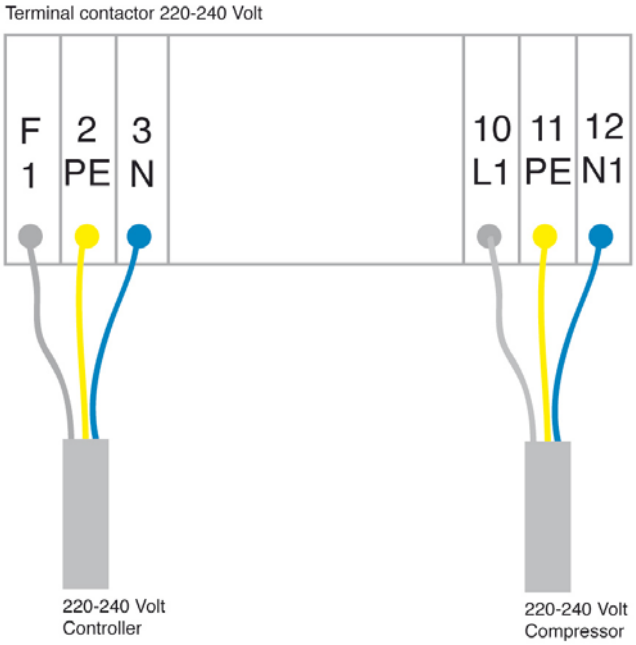
- The heat pump should be mounted level on a vibration absorbing pad slightly larger than the base to provide isolation between the unit and floor
- Connect the heat pump with your water pipes (DN25) – inlet and outlet water
- Install a circulation water pump direct after the outlet water
- Connect the circulation pump with the heat pump
- Connect the controller panel with the two wire
- Put the water tank sensor into your water tank
- If the heat pump installed into south side, please use the second outdoor temperature sensor. Change the existent outdoor temperature sensor. The new one is to install and to put it into the north side. The outdoor temperature sensor is not to install into the sun.

Compressor Time Delay: Be aware there is a 3 minutes time delay.

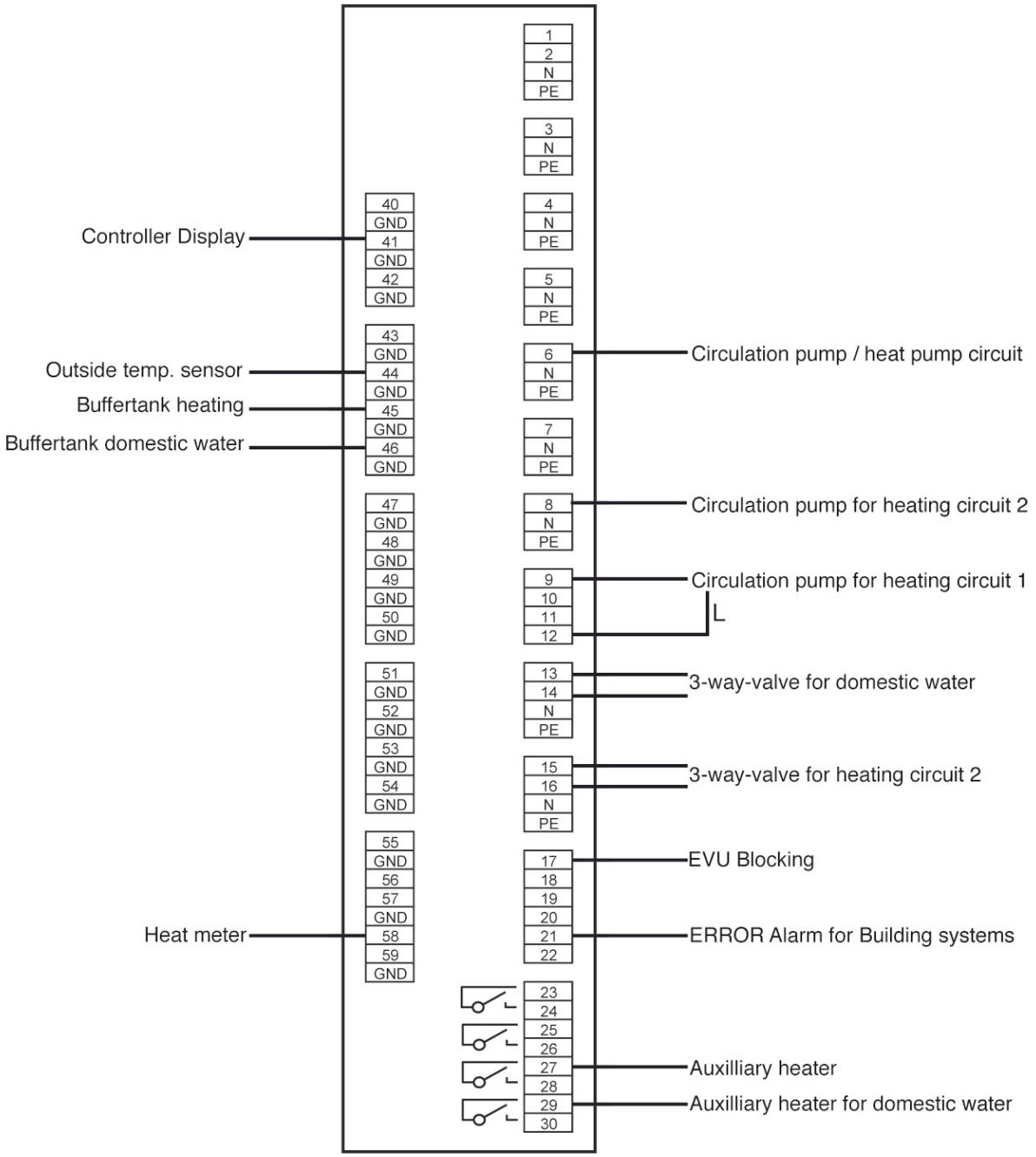


ELECTRIC INSTALLATION

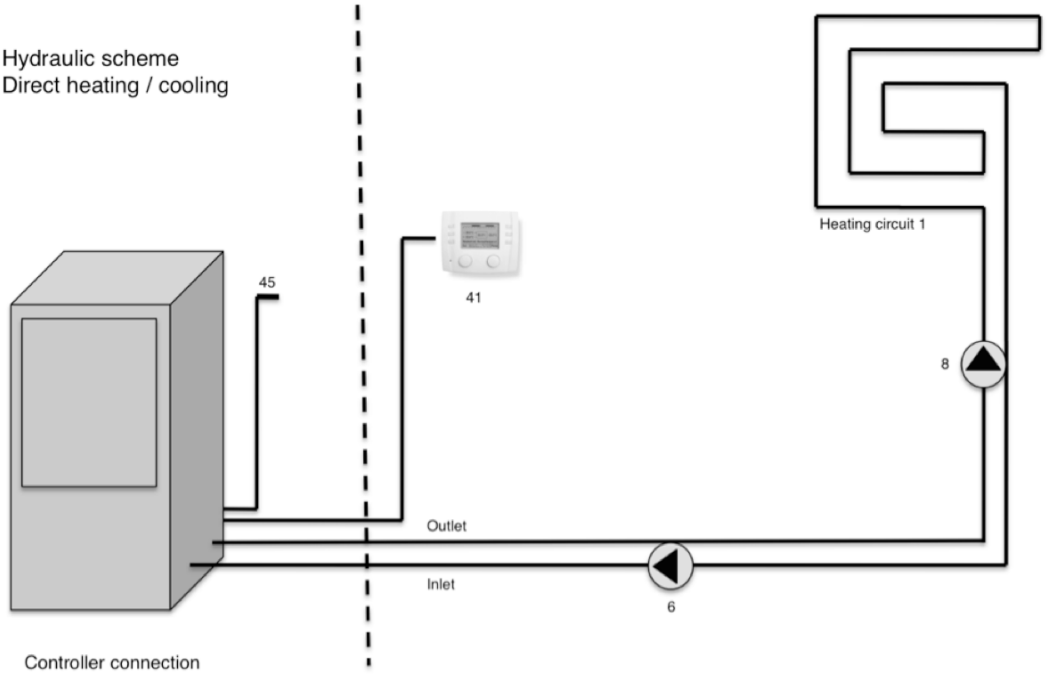
GDH20-Domestic & GDH70-Domestic



GDH200 CONTROLLER INSTALLATION



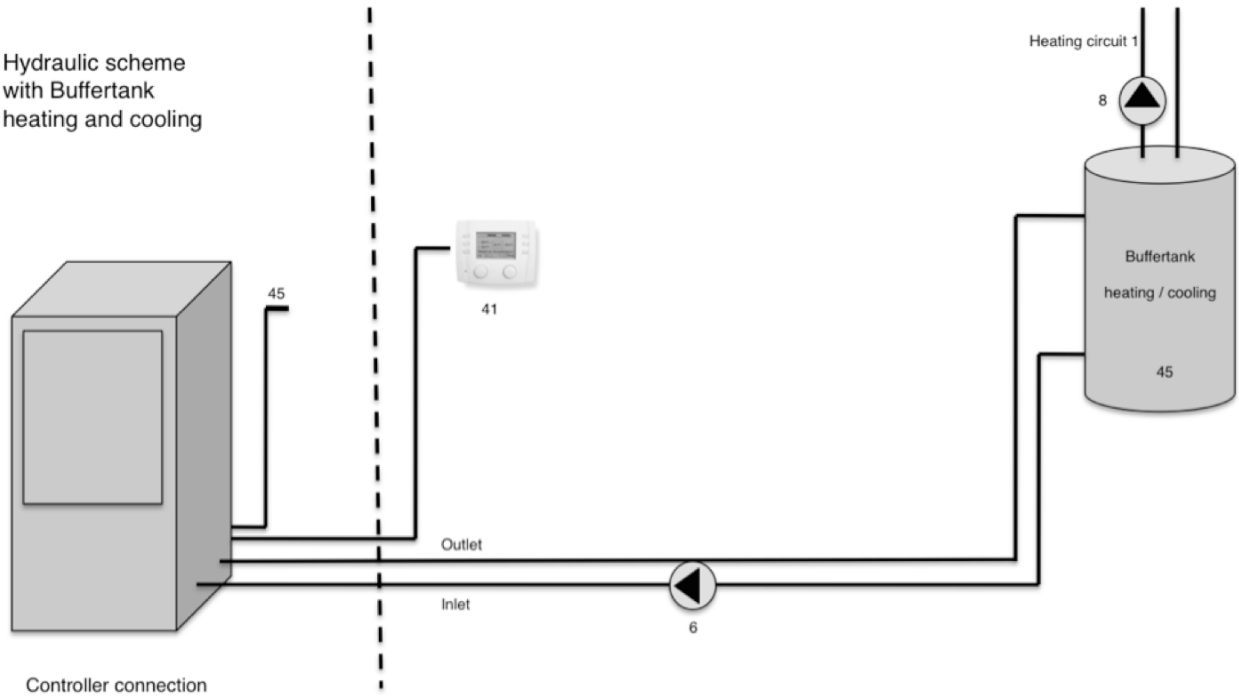
Hydraulic scheme
Direct heating / cooling



Controller connection

41	Controller Display
44	Outside temperature sensor
6	Circulation pump / heatpump circuit
8	Circulation pump / heating circuit 1

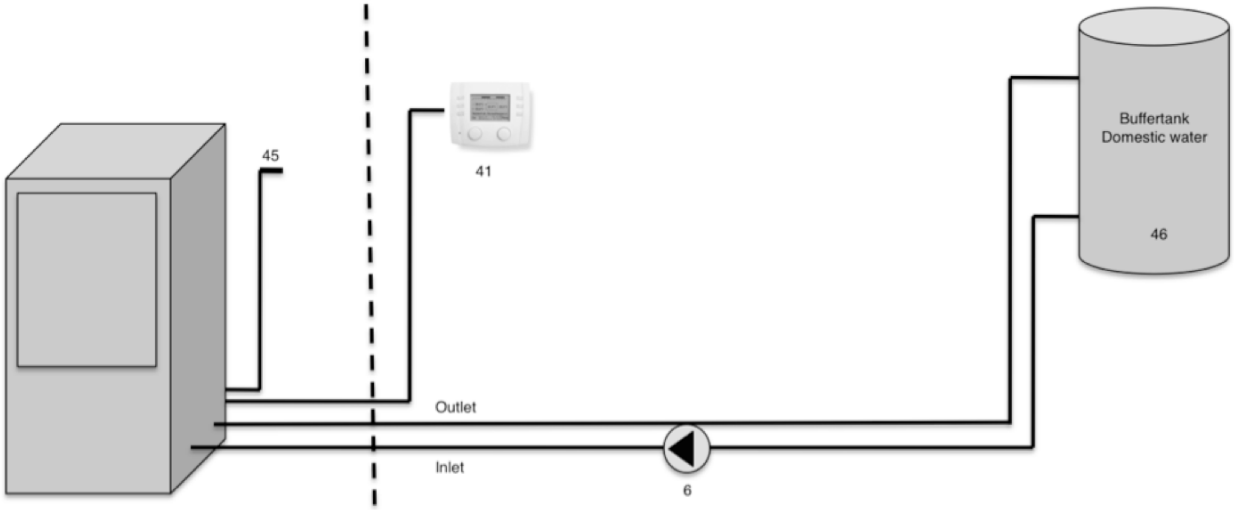
Hydraulic scheme
with Buffertank
heating and cooling



Controller connection

41	Controller Display
44	Outside temperature sensor
45	Buffertank sensor / heating
6	Circulation pump / heatpump circuit
8	Circulation pump / heating circuit 1

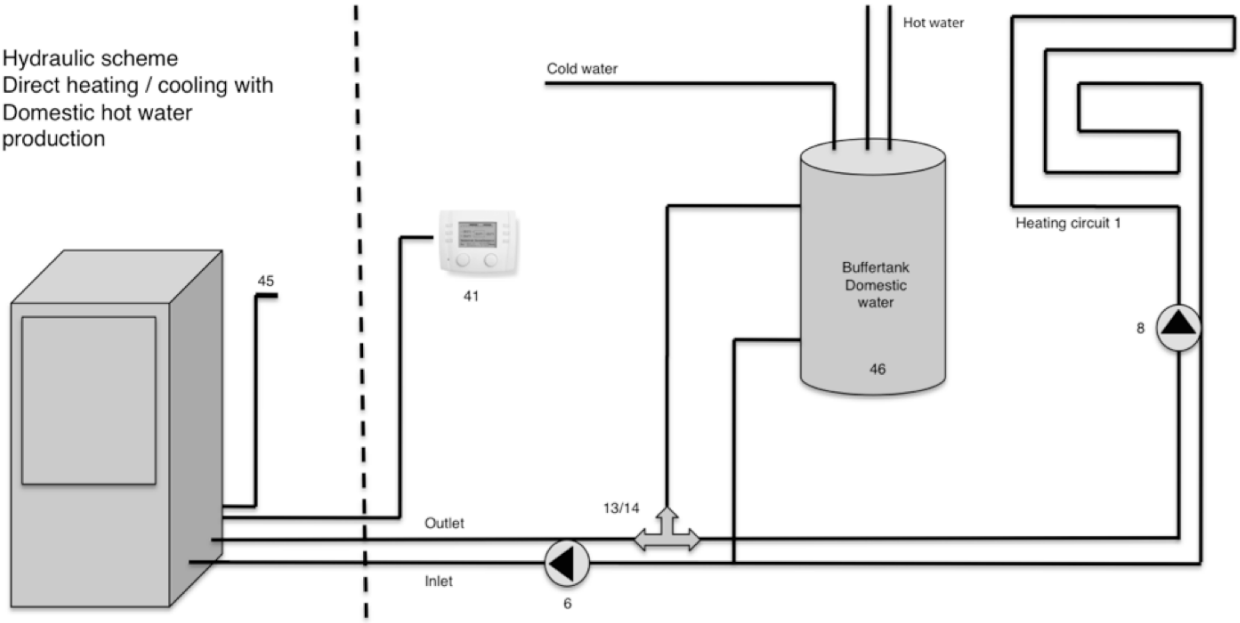
Hydraulic scheme
Domestic water production only



Controller connection

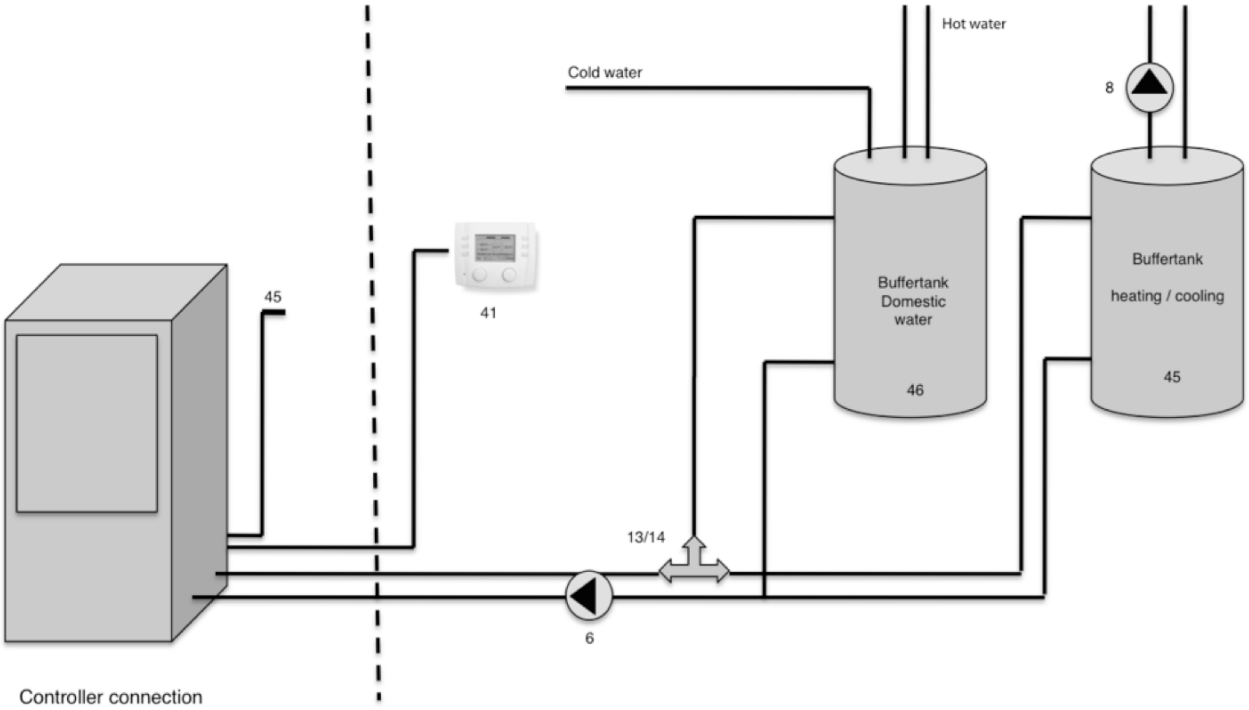
41	Controller Display
44	Outside temperature sensor
46	Buffertank sensor / domestic water
6	Circulation pump / heatpump circuit

Hydraulic scheme
Direct heating / cooling with
Domestic hot water
production



Controller connection

41	Controller Display
45	Outside temperature sensor
6	Circulation pump / heatpump
8	Circulation pump / heating circuit 1
13/14	3-way-valve for domestic water

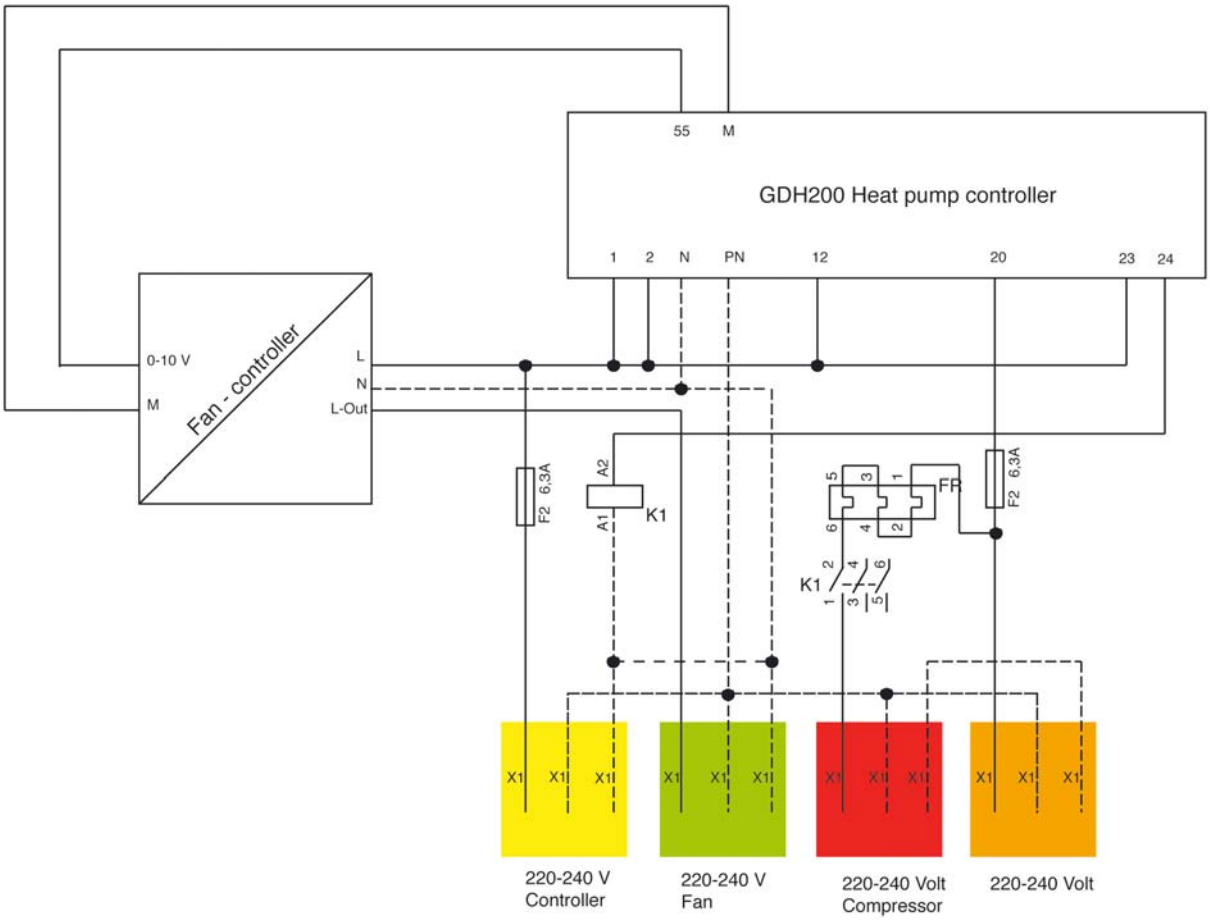


Controller connection

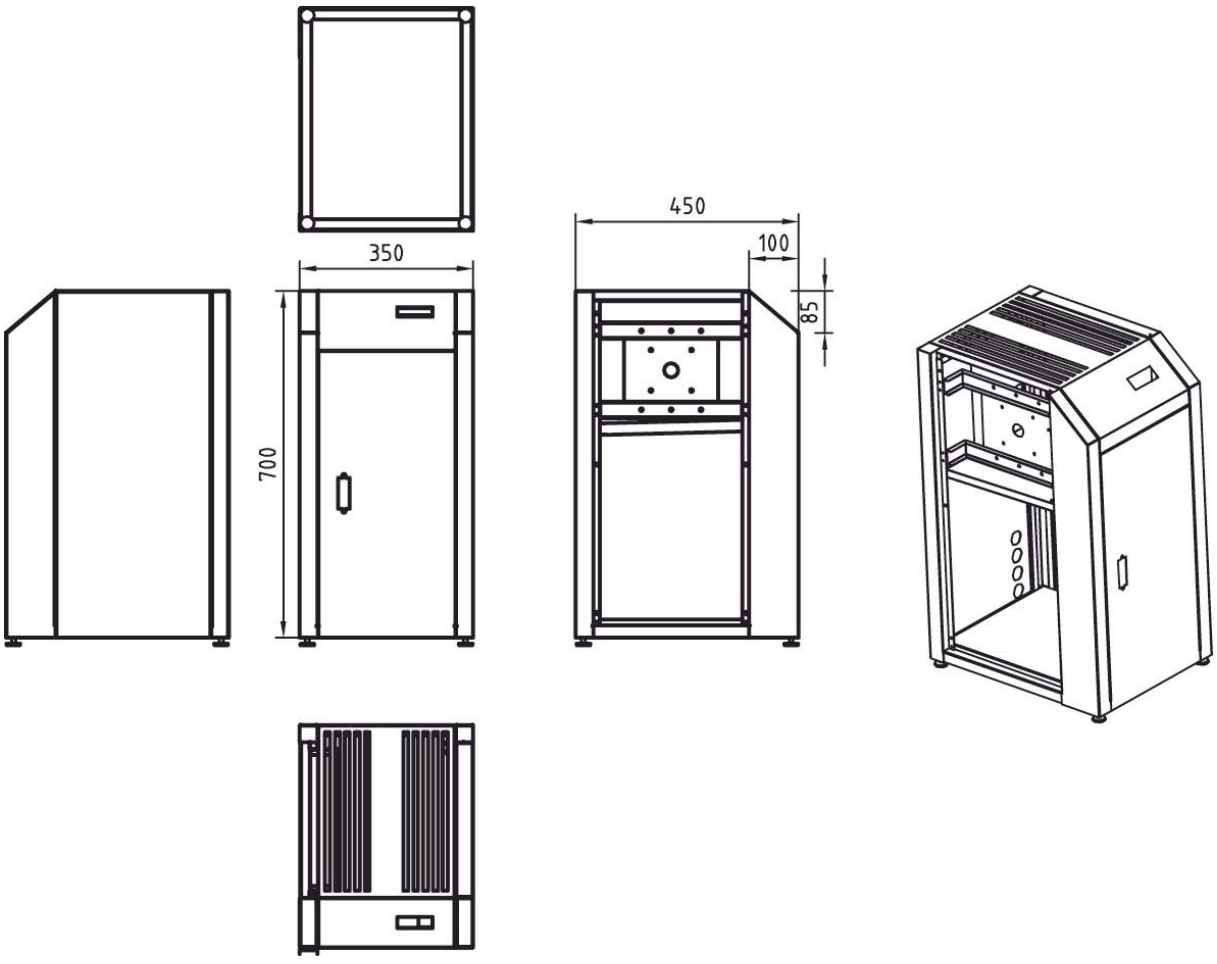
41	Controller Display
44	Outside temperature sensor
45	Buffertank sensor / heating
46	Buffertank sensor / Domestic water
6	Circulation pump / heatpump
8	Circulation pump / heating circuit 1
13/14	3-way-valve for domestic water

APPENDIX: ELECTRICAL WIRING DIAGRAM

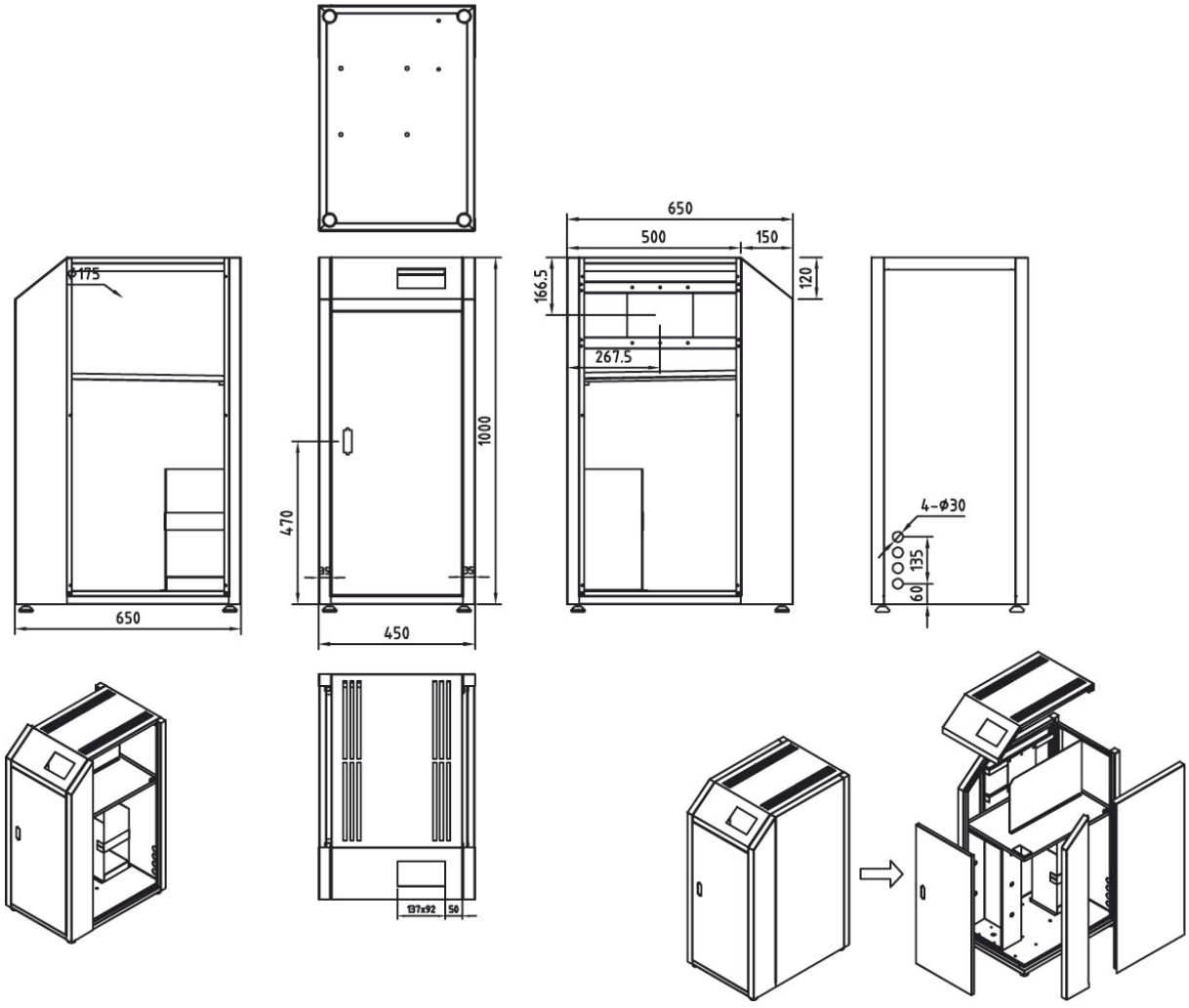
GDH20-Domestic & GDH70-Domestic



DIMENSIONS GDH20-Domestic

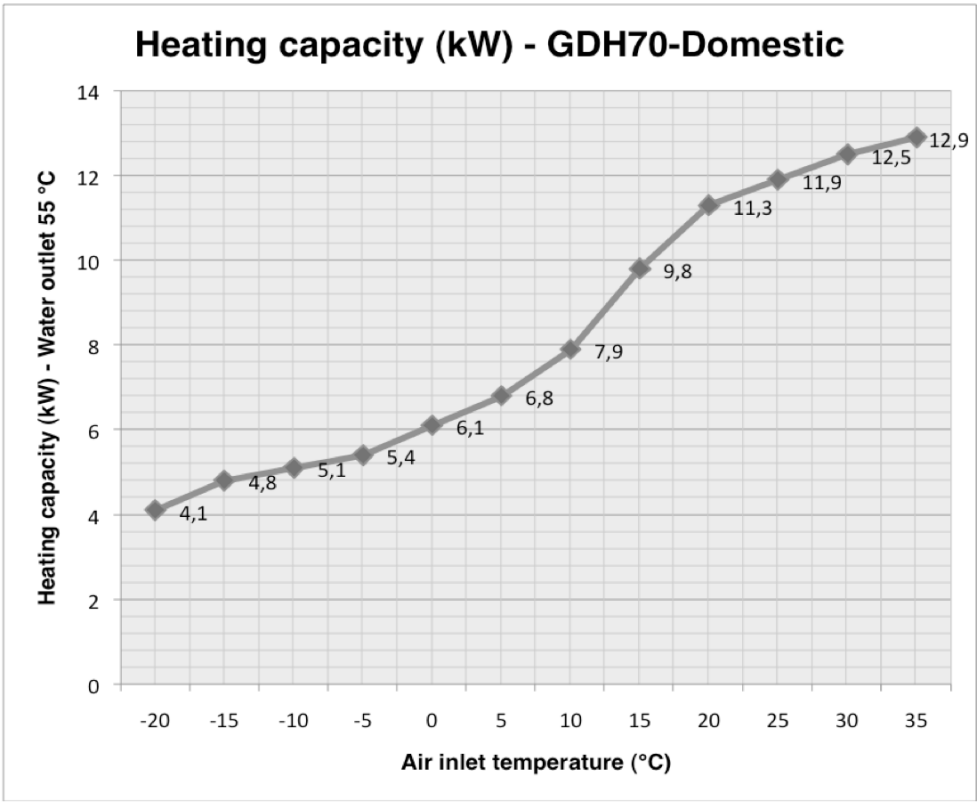


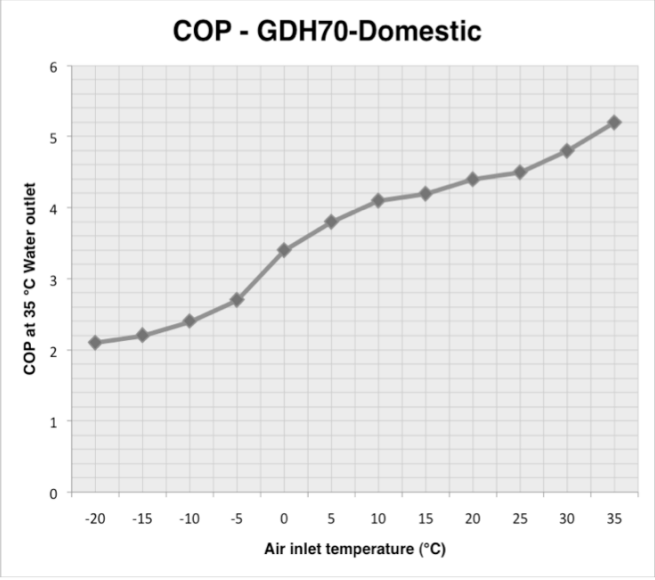
DIMENSIONS GDH70-Domestic

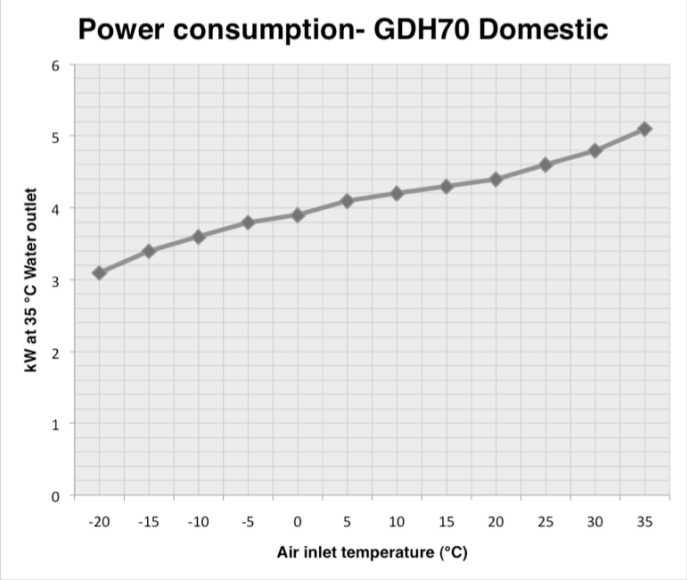


TECHNICAL DATA

Type		GDH20-Domestic	GDH70-Domestic
Certificate and protection		CE / IP24	CE / IP24
Installation location		Indoor	Indoor
Operation temperature limits			
Air	ºC	-25 to +35	-25 to +35
Heat water flow	ºC	Up to 60	Up to 60
Heating capacity / COP			
▸ Outlet water temp. A10/35		3.9 kW / COP 4.1	9.20 kW / COP 4.3
▸ Outlet water temp. A7/35		3.4 kW / COP 3.7	8.50 kW / COP 3.9
▸ Outlet water temp. A2/35		2.2 kW / COP 3.1	7.10 kW / COP 3.3
▸ Outlet water temp. A-7/35		1.7 kW / COP 2.6	6.30 kW / COP 2.8
Cooling capacity / COP			
▸ Outlet water temp. A30/18		1,66 kW / COP 3,0	4.5 kW / COP 3.0
Sound pressure level at distance	dB(A)	44	34
Heat carrier flow nominal	m^3/h	1.5	1.5
Internal pressure drop heat carrier	kPa	10	10
Air flow	m^3/h	300	3.000 – 4.000
Compressor type		Scroll	Scroll
Refrigerant	kg	0.61 (R134 a)	1.9
Control Voltage	V	230	230
Supply Voltage		230V 1-N, 50 HZ	230V 1-N, 50 HZ
Nominal power consumption at A2/W35	KW	2.4	2.4
Starting current	A	18	90 or 20 with soft starter
Nominal current	A	3.4	24.0
Nominal current at A2/W35	A	2.4	10.4
Device connection to heating system		DN25	DN25
Type of defrosting		Reverse cycle	Reverse cycle
Dimensions Indoor Unit			
▸ Size (H X W X D)	mm	700 x 350 x 500	1.000 x 450 x 650
▸ Weight	kg	65	95


Heating capacity (kW) - GDH70-Domestic
Heating capacity (kW) - Water outlet 55 °C
Air inlet temperature (°C)
4,1
4,8
5,1
5,4
6,1
6,8
7,9
9,8
11,3
11,9
12,5
12,9


COP - GDH70-Domestic
COP at 35 °C Water outlet
Air inlet temperature (°C)


Power consumption- GDH70 Domestic
kW at 35 °C Water outlet
Air inlet temperature (°C)

EC Declaration of Conformity

CE

The undersigned

GDH Energy Guangzhou Co., Ltd.
No. 340 Dongjiang Road, Zhongye Building,
Free Trade Zone, GETDD,
510730 Guangzhou, China

hereby confirm that the design and construction of the product(s) listed below, in the version(s) placed on the market by us, conform to the relevant requirements of the applicable EC directives.

This declaration becomes invalidated if any modifications are made to product(s) without our prior authorization.

Designation

Air-to-water heat pumps
for outdoor installation, containing R404A

EC Directives

EC Low Voltage Directive
EC EMC Directive
Pressure Equipment Directive

Typ(e):

GDH70-Air Split
GDH120-Air Split

Harmonized EB Standards:

EN 255:1997
EN 378:2000
DIN 8901

DIN EN 60335-1 (VDE 0700 T1):2005-07	EN603351:2002+A1:2004+A1:2004
DIN EN 60335-2 (VDE 0700 T40):2004-03	EN 60335-2-40:2003
DIN EN 55014-1 (VDE 0875 T14-1):2003-09	EN 55014-1:2000+A1:2001+A2:2002
DIN EN 55014-2 (VDE 0875 T14-2):2002-08	EN 55014-2:1997+A1:2001
DIN EN 61000-3-2 (VDE 0838 T2):2001-12	EN 61000-3-2:2000
DIN EN 61000-3-3 (VDE 0838 T3):2002-05	EN 61000-3-3:1995+Corr.: 1997+A1:2001

National Directives

VBG20
DruckbehV
DIN 8901
DIN 8975
SVTI

GDH Energy Guangzhou Co., Ltd.

Guangzhou, China, 2009-07-01

Subject to modification. Images are for demonstrations.

2009-07-01

GDH Energy Guangzhou Co., Ltd., Guangzhou, China